# **POWERED MIXERS**

From Fender Pro Audio

Owner's Manual for SRM 6302 / 8302

P/N 050804 REV A





# Fender Musical Instruments 7975 North Hayden Road, Scottsdale, Arizona 85258 U.S.A.

Fender knows the importance of sound reinforcement. From the simple box-top mixer to today's professional touring concert systems, the need to communicate, to make the connection between the performer and the audience is foremost in Fender's mind.

Perhaps no other single piece of gear can make or break your band's sound. You see, your sound system is more than just a combination of dials, wires and speakers. It is an integral part of the audio chain and should be treated with special care and attention to detail.

At Fender, we know what building quality musical instruments and sound reinforcement equipment is all about. In fact, many of the world's best sounding electric musical instruments and sound reinforcement equipment proudly wear the Fender name.

Whether you need a simple box top powered mixer for your Saturday afternoon jam, or a professional full-size concert system, Fender has the sound reinforcement equipment to meet your needs. Likewise, your decision to purchase Fender pro audio gear is one you will appreciate with each performance for years to come.

Wishing you years of enjoyment and a heartfelt thank you,

## Bill Schultz

Bill Schultz Chairman Fender Musical Instruments Corporation

# SRM 6302 / 8302 PROFESSIONAL POWERED MIXER

### INTRODUCTION

150 Watts per Channel at  $4\Omega$ 

**Assignable Dual Power Amplifiers** 

9-Band Assignable Graphic Equalizer with 30mm Sliders

3-Band Equalizer per Input Channel

+48V DC Phantom Power

Individual Channel Effects Level Control

Both 1/4 inch Phone TRS and 3-Pin XLR Female Input Connectors

Patch Points for Line Level Output and Power Amp Inputs and Outboard Gear

Full-bodied Spring Reverb

The SRM 6302 / 8302: a dual 150 watt professional powered mixer from your friends at Fender® Pro Audio. We are sure you will find your new SRM 6302 / 8302 to be both a unique and effective sound reinforcement product, providing years of trouble-free service.

With ease of setup in mind, the integrated mixer/amplifier design of your SRM 6302 / 8302 makes it a complex and versatile unit, yet simple to operate. Enclosed in a boxtop style cabinet, your SRM 6302 / 8302 features individual channel preamps, an assignable dual power amplifier, +48V DC phantom power, a 9-band graphic equalizer, line and mic level channel inputs, a patch bay and much, much more. With 1/4 inch TRS phone jacks, 3-Pin XLR female input jacks and stereo RCA input jacks, your SRM 6302 / 8302 can accommodate almost any input connection and signal level.

Ideal for live music, churches, auditoriums, hotel conference or meeting rooms, your SRM 6302 / 8302 is suitable for a wide variety of sound reinforcement applications. With its assignable dual power amplifier, your SRM 6302 / 8302 can feed your main front of house speakers while simultaneously providing power for stage monitors. Its front panel patch bay makes using outboard effects gear and signal processing equipment a snap. Moreover, the patch bay provides easy access for adding or rerouting power amplifiers.

Designed to meet the most demanding needs of audio professionals, your SRM 6302 / 8302 will provide years of reliable, trouble-free service, day in and day out. Please read through this owner's manual in order to more thoroughly understand the operation of your SRM 6302 / 8302.

### WARNING:

- TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.
- NO USER SERVICEABLE PARTS INSIDE, REFER SERVICING TO QUALIFIED PERSONNEL ONLY.
- ALLOW AT LEAST 3" (7.6 cm) AROUND THE UNIT FOR PROPER VENTILATION.
- THIS UNIT MUST BE EARTH GROUNDED.

### INPUT CHANNEL CONTROL FUNCTIONS

# A OFFECTS B HIGH C -15 HIGH D -15 LOW F MONITOR F LEVEL

- **A. EFFECTS** This knob controls the amount of signal its respective channel sends to the overall effects mix. When the knob is set at 0, the output is "dry".
- **B. HIGH** Adjusts the amount of high frequency boost or cut in the channel. When all the tone controls are set at 0 (straight up), the channel is "flat" with no frequencies cut or boosted.
- C. MID Adjusts the amount of middle frequency boost or cut in the channel.
- **D. LOW** Adjusts the amount of low frequency boost or cut in the channel.
- **E. MONITOR** This knob controls the amount of signal its respective channel sends to the monitor mix. When the knob is set at 0, the channel's signal is not sent to the monitor bus.
- F. LEVEL Adjusts the volume control of the individual channel. Rotating the knob clockwise increases the respective channel's contribution to the "Main Out" mix. Adjust this control after the MAIN or overall volume of the SRM 6302 / 8302 has been set.

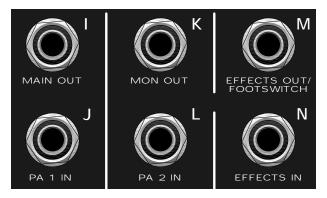
### **INPUT CHANNEL CONNECTIONS**



- G. LINE Plug your instrument in here. This 1/4 inch TRS balanced input jack suited for use with items having a line level output such as high impedance microphones, keyboards, drum machines, outboard effects, etc. It accepts both balanced and unbalanced cables
- **H. MIC** Plug your microphone in here. This three pin XLR balanced female input connector is intended for input signals from low

impedance microphones. Pins 2 and 3 provide Phantom Power (+48V DC) for condenser style microphones when the phantom power switch is on.

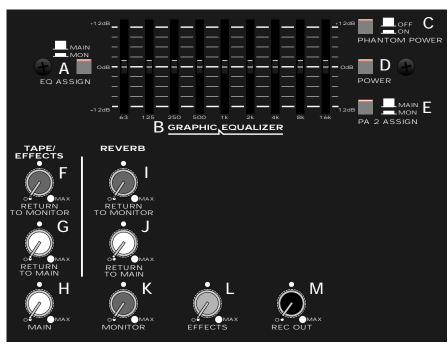
### PATCH BAY PANEL CONNECTIONS



- I. MAIN OUT This 1/4 inch, TS, unbalanced, line level output is designed to feed the SRM 6302 / 8302's main bus signal to an external power amplifier or main house mixer.
- J. PA 1 IN This 1/4 inch, TS, unbalanced, line level input jack allows the SRM 6302 / 8302's power amplifier #1 (PA 1) to be fed from an external signal source. When this connection is used, the "main out" connection to PA 1 is overridden.
- **K. MON OUT** This 1/4 inch, TS, unbalanced, line level output is designed to feed the SRM 6302 / 8302's monitor bus signal to an external power amplifier or monitor system.
- L. PA 2 IN This 1/4 inch, TS, unbalanced, line level input jack allows the SRM 6302 / 8302's power amplifier #2 (PA 2) to be fed from an external signal source. When this connection is used, the internal connection to PA 2 is overridden.
- M. EFFECTS OUT/FOOTSWITCH This 1/4 inch, TS, unbalanced, line level output jack is designed to feed the SRM's effects bus signal to an external signal processing device, such as a digital delay or a chorus unit. When a footswitch (P/N 048458, optional) is inserted into this jack, the SRM's internal reverb can be turned on or off remotely.
- N. EFFECTS IN This 1/4 inch, unbalanced, TS, line level input jack is designed to accept signal from an external processing device, such as a digital delay or a chorus unit. The signal entering this jack is mixed into the Main and Monitor using the "Tape/Effects" controls labeled "Return to Main" and "Return to Monitor".

### MASTER CONTROL PANEL FUNCTIONS

- A. EQ ASSIGN This button switches the graphic equalizer between the main and the monitor bus. When this button is pressed, the EQ is assigned to the monitor bus.
- B. GRAPHIC EQUALIZER This 9 band graphic equalizer consists of active band pass / band reject filters spaced at octave intervals. Moving the sliders up or down boosts or cuts the gain at the indicated frequency.
- C. PHANTOM POWER When this button is pressed, a +48V DC Phantom Power supply is activated, necessary for some condenser style microphones. Before plugging or unplugging any microphone, make sure the Phantom Power supply is off.
- **D. POWER LED** This LED illuminates when the SRM 6302 / 8302 is on.
- E. PA 2 ASSIGN This button switches the second power amplifier between the main and the monitor bus. When this button is pressed, the second power amplifier is assigned to the monitor bus providing power to drive monitor speakers. When this button is in the Main position, the second power amplifier is assigned to the main bus providing additional power for front of house enclosures. When connecting the speakers to your SRM 6302 / 8302, connect one cabinet to the PA 1 Out jack and the other to the PA 2 Out jack.
- F. TAPE/EFFECTS RETURN TO MONITOR Adjusts the tape/effects signal level sent to the monitor mix from either the Effects In or Tape In jacks. Rotating the knob clockwise increases the tape/effects signal sent to the monitor mix.
- G. TAPE/EFFECTS RETURN TO MAIN Adjusts the tape/effects signal level sent to the main mix from either the Effects In or Tape In jacks. Rotating the knob clockwise increases the tape/effects signal sent to the main mix.
- H. MAIN The main output volume control of the SRM 6302 / 8302. Any adjustments to this control will affect the signal level at the Main Out, as well as, PA1 and PA2 depending upon the PA2 Assign switch position and patch bay configuration.



- I. REVERB RETURN TO MONITOR Adjusts the amount of reverb signal level sent to the monitor mix. Rotating the knob clockwise increases the reverb signal sent to the monitor mix. When the knob is set at 0, the output is "dry".
- J. REVERB RETURN TO MAIN Adjusts the amount of reverb signal level sent to the main mix. Rotating the knob clockwise increases the reverb signal sent to the main mix. When the knob is set at 0, the output is "dry".
- **K. MONITOR** The monitor output volume control of the SRM 6302 / 8302. Any adjustments to this control will affect the signal level at the Mon Out, as well as, PA1 and PA2 depending upon the PA2 Assign switch position and patch bay configuration.
- **L. EFFECTS** Adjusts the signal level present at the Effects Out / Footswitch jack, as well as, the signal driving the reverb. Rotating the knob clockwise increases the amount of tape/effects and reverb drive signal. When the knob is set at 0, there is no effects drive signal.
- M. REC OUT Adjusts the tape out signal level of the SRM 6302 / 8302. (The Main Out signal feeds this control.) Rotating the knob clockwise increases the output level. When the knob is set at 0, there is no signal level output.

### TAPE INPUT / OUTPUT JACKS



O. TAPE IN - Unbalanced phono (RCA) input jacks designed for use with a tape player, CD player, etc. These jacks sum the stereo left and right input signal to a mono signal useful for playing prerecorded music. The tape/effects return to main and

tape/effects return to monitor control the volume to these buses respectively.

**P. TAPE OUT -** Unbalanced phono (RCA) output jacks designed for use with a tape recorder. They produce a mono signal. The *rec out* knob controls the tape out signal level.

### REAR PANEL



Q. PA 1 OUT / PA 2 OUT - These are speaker level output jacks designed to feed your main or monitor speaker enclosures. Remember, the minimum impedance load is 4 ohms. Connecting a load of less than 4 ohms may result in unsatisfactory performance such as overheating to the point of thermal shutdown. PA 1 Out jacks are intended for the main speakers. The use of the PA 2 Out jacks depends on the position of the PA 2 Assign switch. (See item E on page 5).



R.POWER SWITCH - Turns the AC power ON and OFF. When the switch is in the OFF position, the SRM 6302 / 8302 is completely shut down.



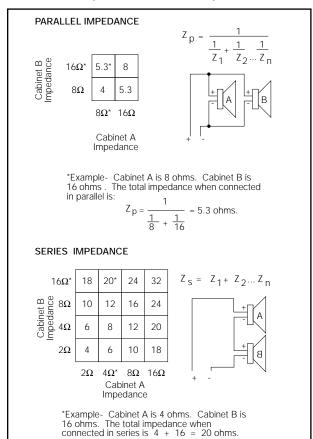
S. SUPPLY CORD - This is a grounding type supply cord to reduce the possibility of shock hazard. Completely unwind the cord from its cord wrap to prevent blocking air flow to the transformer. Be sure to connect the cord to a grounded receptacle. DO NOT ALTER THE AC PLUG.

### SPEAKER WIRING AND CONNECTIONS

Parallel or series are the two basic ways which multiple speakers can be connected to a single power amplifier. When speakers are connected in parallel, their combined impedance decreases. For speakers wired in series the opposite is true, their combined impedance increases. Also, when speakers are wired in series, higher impedance speakers in the series draw more power from the amplifier than do speakers in the series with lower impedances. When speakers are wired in parallel, the opposite is true.

At Fender\*, we recommend connecting multiple speakers in parallel for several reasons. First, if one speaker fails, the others will continue to operate. Second, because in a series connection one speaker affects the output of the other speakers, unpredictable frequency response is a concern. Third, most speaker cabinets are already wired for parallel connections making parallel connections the most common wiring method.

When using your SRM 6302 / 8302, be sure that the minimum load connected to each channel is 4 ohms. Below are two charts demonstrating how to calculate both parallel and series impedance.



Additionally, power and audio signal cables are the most common sources of sound system failure. Well made and carefully maintained cables are essential to the reliability of the entire sound system. If long speaker cables are required, it is important to ensure the cable is sufficient to transfer all of the available amplifier power to the speakers rather than absorbing the power itself. As a rule of thumb, larger wires are better as they conduct more power to the speakers (larger wire has smaller gauge numbers).

Below are two charts listing speaker wire gauges and recommendations for best results.

### SPEAKER WIRE GAUGE

SPEAKER WIRE LENGTH	100'-UP (30.5 m-UP)	10	12	14
	50'-100' (15.25-30.5 m)	12	14	16
	*25'-50' (7.60-15.25 m)	14	*16	18
	10'-25' (3.05-7.60 m)	16	18	18
	0'-10' (0.00-3.05 m)	18	18	18
	,	$4\Omega$	$\Omega 8^*$	16Ω

### SPEAKER IMPEDANCE [z]

\*Example - If the speaker wire length required is between 25-50 feet (7.60-15.25 meters) and the speaker impedance is  $8\Omega$ , the minimum recommended speaker wire gauge is 16.

AWG	Cross- Section [mm <sup>2</sup> ]	Resistance in $\Omega$ per foot (30.5 cm) @ 77° F (25° C)	
18	0.83	.00651	
16	1.32	.00409	
14	2.10	.00258	
12	3.32	.00162	
10	5.27	.00102	
8 8.38		.00064	

### INPUT / OUTPUT CONNECTIONS



The SRM 6302 / 8302 has a variety of connectors on its input / output panels. Below is a chart listing the various types and their pin outs.

Jack	Style	Connection	Pin Out			
MIC INPUTS	XLR Female	Balanced Input	Pin 1 = GND Pin 2 = POS Pin 3 = NEG			
LINE INPUTS	1/4" TRS	Balanced Input	Tip = POS Signal Ring = NEG Signal Sleeve = GND			
MAIN, MONITOR, EFFECTS OUTPUTS	1/4" TS	Unbalanced Output	Tip = Signal Output Sleeve = GND			
FOOT SWITCH	1/4" TS	Switch	Tip = Signal Sleeve = GND			
PA 1, PA 2, EFFECTS INPUTS	1/4" TS	Unbalanced Input	Tip = Input Signal Sleeve = GND			
TAPE IN / OUT	Dual RCA	Unbalanced Input / Output	Inner Ring = Signal Outer Shell = GND			
PA 1, PA 2 OUT	1/4" TS	Speaker Output	Tip = Signal Sleeve = GND			

### BASIC SETUP OF YOUR SRM 6302 / 8302



Before using the SRM 6302 / 8302, please read and follow the steps listed below:

- 1. **IMPORTANT** Heed all safety warnings when operating the SRM 6302 / 8302.
- 2. Make sure the power switch is in the OFF position and all volume levels are in the 0 position.
- 3. Next, plug the supply cord into a power source with the correct voltage.
- 5. Connect the speaker cables from the SRM 6302 / 8302 PA out jacks to the input jacks of the speaker cabinets.
- 6. Connect the cord(s) from any outboard gear, microphones or other signal source(s) to the appropriate input jack(s) on your SRM 6302 / 8302's.
- 7. First, turn all outboard gear, instruments and other equipment ON, then the SRM 6302 / 8302.
- 8. Increase volume controls and effects level controls to their desired levels, listening for feedback or ringing.
- 9. When shutting down the SRM 6302 / 8302, turn OFF the SRM 6302 / 8302 first then any additional outboard gear, instruments or other equipment.

For more detail on setting up your SRM 6302 / 8302, please refer to the diagrams on pages 10 thru 13.

### **GROUNDING AND HUMS**



Ground loops are one of the most common causes of hum and buzz in sound reinforcement systems and other audio products. A ground loop usually occurs if the separate pieces of equipment are plugged into different AC

circuits. Also, if the audio wiring is placed too close to the power cords, hums or buzzes can bleed into the system. Still, improperly maintained power and audio cables are yet another cause of bothersome noise. In order to help minimize stray hums and buzzes, here are some helpful hints.

- 1. Keep all electronics connected to the sound system on the same electrical circuit.
- 2. Keep audio signal cables away from the AC power cords.
- 3. Use balanced cables when applicable.
- 4. Always plug the SRM 6302 / 8302 into a grounded AC electrical outlet.
- 5. Be sure to use properly maintained cords and cables with the SRM 6302 / 8302.

### **TOLEX COVERING CARE**



The SRM 6302 / 8302 is covered in genuine Tolex® for long life and lasting good looks. To clean the cabinet, use a sponge with a light soapy solution. Avoid spilling any liquids on the operating

surface, heat sink, grille, volume and tone controls, switches and line cord. ALWAYS unplug the SRM 6302 / 8302 before cleaning it or approaching it with fluids. Before plugging in the SRM 6302 / 8302 wait until the unit has completely dried.

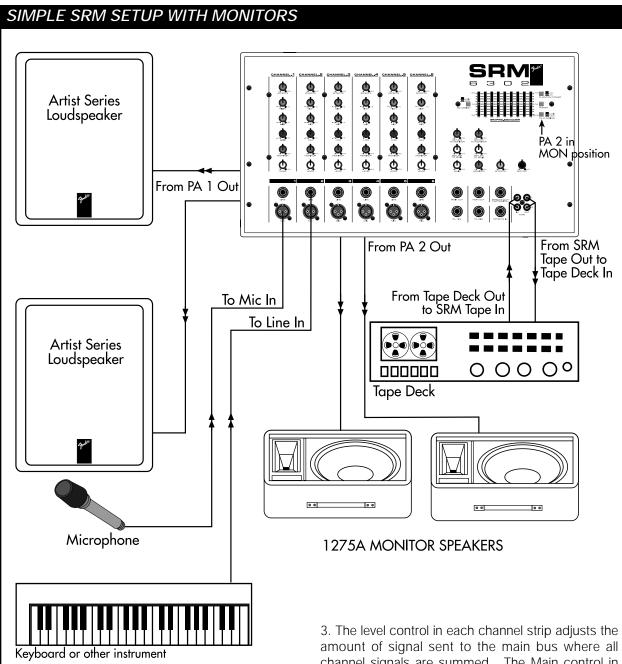
### TROUBLESHOOTING



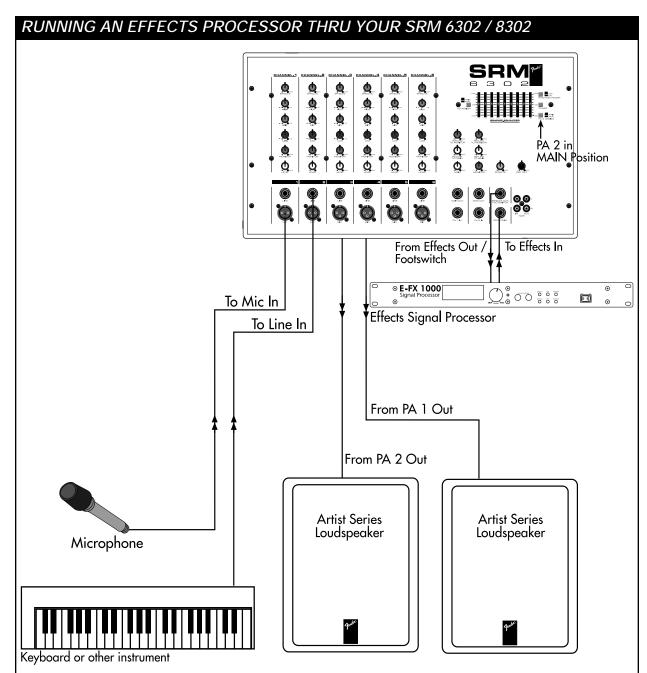
If the SRM 6302 / 8302 is set up but does not function, please check the following items:

- Is the SRM 6302 / 8302's power cord properly plugged into an electrical outlet?
- Is there power at the outlet?
- (If applicable) does your instrument have power?
- Are the volume control knobs on the SRM 6302 / 8302 turned above the 0 position?
- Are the volume control knobs on your instruments turned above their minimum position?
- Is the mic/instrument properly plugged into the SRM 6302 / 8302?
- Is the mic/instrument turned on?
- Are your audio cables frayed, cut or damaged?
- If using a condenser mic, is the phantom power turned on?
- If using an outboard gear, are the cords properly connected?
- Is there power to the outboard gear?
- Are the levels on your outboard gear above their minimum positions?

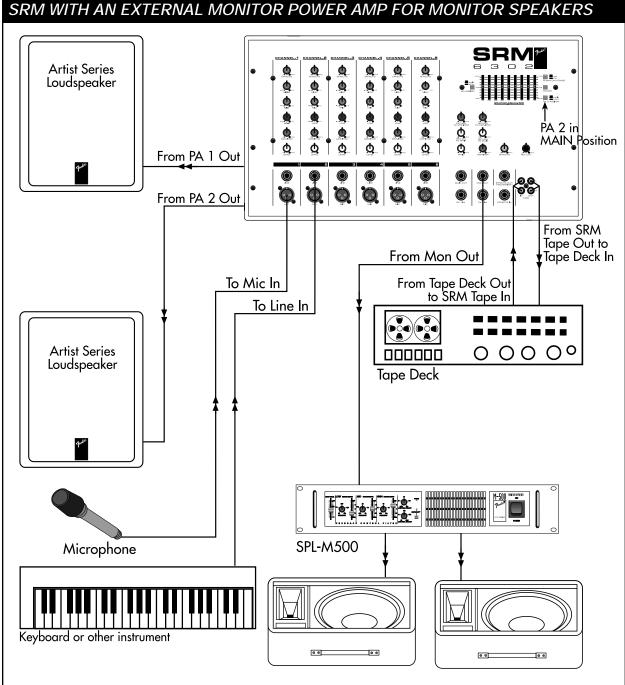
If after checking all of the above the SRM 6302 / 8302 is still not performing correctly, consult your authorized Fender Service Center.



- 1. Connect a microphone to a Mic input jack and any keyboard or other instrument to a Line input jack.
- 2. Next, connect speaker cords from the PA 1 Out jacks to the main speakers and from the PA 2 Out jacks to the monitor speakers.
- 3. The level control in each channel strip adjusts the amount of signal sent to the main bus where all channel signals are summed. The Main control in the master section adjusts the volume level to the main speakers. The Monitor control in each channel strip adjusts the amount of signal sent to the monitor bus where all monitor channel signals are summed. The Monitor control in the master section adjusts the volume level to the monitor speakers.
- 4. Be sure to turn the tape deck, keyboard or other instruments and gear on first, then the SRM 6302 / 8302.



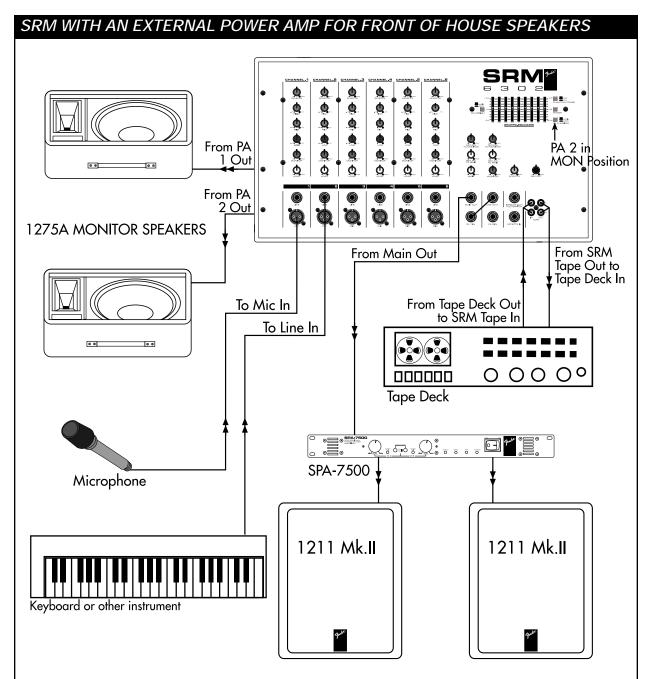
- 1. Connect speakers, microphones and other equipment to the SRM 6302 / 8302 as before.
- 2. Next, connect a cord from the Effects Out/Footswitch jack to the input of the effects processing unit. Return the signal to the SRM 6302 / 8302 by connecting a cord from the output of the effects unit to the Effects In jack on the SRM. (When PA 2 is assigned to the main front of house enclosures, be sure one enclosure is connected to a PA 1 Out jack and the other is connected to a PA 2 Out jack.)
- 3. The Effects control in each channel strip adjusts the amount of signal sent to the reverb / effects bus where all the effects signals from the channels are summed. The Effects control in the master section adjusts the signal level to the effects processing unit and the reverb pan.
- 4. Be sure to turn on the tape deck, keyboard or other instruments and outboard gear before powering up the SRM 6302 / 8302.



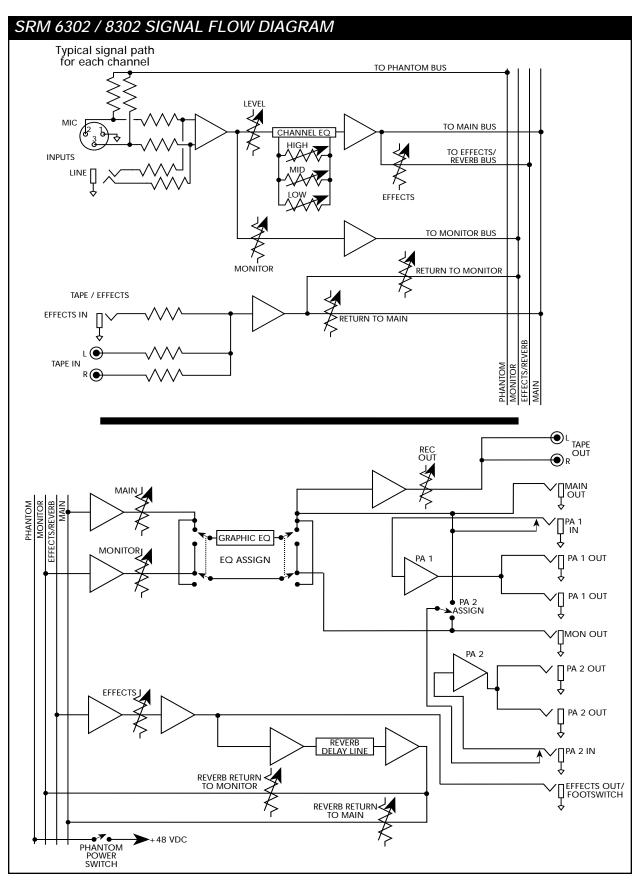
1. Connect a cord from the Mon Out jack to the monitor power amp and system. With an external monitor power amp, the SRM's second power amp may be assigned to the main bus for additional power to the front of house speakers. When PA 2 is assigned to the main front of house enclosures, be sure one enclosure is connected to the PA 1 Out jacks and the other is connected to the PA 2 Out jacks.

### 1275A MONITOR SPEAKERS

- 2. The Monitor control in the master section adjusts the signal level to the monitor power amp.
- 3. Be sure to turn the tape deck, keyboard or other instruments and gear on first, then the SRM 6302 / 8302.



- 1. Connect a cord from the Main Out jack to an external power amp. Be sure one monitor enclosure is connected to a PA 1 Out jack and the other is connected to a PA 2 Out jack. (PA 1 power amp can now be assigned to monitor speakers by connecting a small, shielded jumper cable from the Mon Out jack to PA 1 In. Next, connect the PA2 power amp to Monitor Out by placing the PA2 Assign switch to the Mon position. The Monitor control will now adjust volume for both PA 1 and PA 2.)
- 2. The Main control in the master section adjusts the signal level to your external power amp.
- 3. Be sure to turn your tape deck, keyboard or other instruments and gear on first, then your SRM 6302 / 8302 and external power amplifier.



### SPECIFICATIONS FOR THE SRM 6302

**DESIGNATION TYPE** PR 332

**PART NUMBER** 071-6321-000 (120 V)

071-6321-000 (120 V) 071-6321-030 (240 V) Aust 071-6321-040 (230 V) UK 071-6321-060 (230 V) Euro

POWER SPECIFICATIONS 120V version: 120V AC, 60 Hz, 900W

230V version: 230V AC, 50 Hz, 900W

THIS EQUIPMENT CONFORMS TO THE FOLLOWING DIRECTIVES: EMC 89/336/EEC AND LV 73/23/EEC

240V version: 240V AC, 50 Hz, 900W

PRE-AMPLIFIER SECTION

MIC INPUT IMPEDANCE  $1.8 \text{ k}\Omega$ 

**LINE INPUT IMPEDANCE**  $18.2 \text{ k}\Omega$ 

MIC INPUT SENSITIVITY 7 mV

**LINE INPUT SENSITIVITY** 65 mV

CHANNEL TONE CONTROLS Low +/- 15 dB @ 30 Hz

Mid +/- 15 dB @ 750 Hz High +/- 15 dB @ 15 kHz

**GRAPHIC EQUALIZER** +/- 12 dB @ 63, 125, 250, 500, 1 k, 2 k, 4 k, 8 k and 16 kHz

OVERALL AMPLIFIER -3 dB @ 10 Hz to -3 dB @ 50 kHz

FREQUENCY RESPONSE (Line In @ 10 mV)

PHANTOM POWER +46.5 V DC

**POWER AMPLIFIER SECTION** 

**POWER OUTPUT** 150W per channel, <0.05% T.H.D. + noise @ 1 kHz into 4  $\Omega$ 

RATED LOAD IMPEDANCE  $4 \Omega$ 

**INPUT SENSITIVITY** 1.25 V R.M.S.

INPUT IMPEDANCE  $22 \text{ k}\Omega$ 

**DELTACOMP™ RANGE** 20 dB

**DIMENSIONS** Height: 12 in 30.5 cm

 Width:
 21 in
 53.3 cm

 Depth:
 11.75 in
 29.8 cm

 Weight:
 35 lbs
 15.9 kg

PRODUCT SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

### SPECIFICATIONS FOR THE SRM 8302

**DESIGNATION TYPE** PR 332

**PART NUMBER** 071-8321-000 (120 V)

071-8321-030 (240 V) Aust 071-8321-040 (230 V) UK 071-8321-060 (230 V) Euro

POWER SPECIFICATIONS 120V version: 120V AC, 60 Hz, 900W

230V version: 230V AC, 50 Hz, 900W 240V version: 240V AC, 50 Hz, 900W

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**INPUT SENSITIVITY** 1.25 V R.M.S.

INPUT IMPEDANCE  $22 \text{ k}\Omega$ 

**DELTACOMP**<sup>™</sup> **RANGE** 20 dB

**DIMENSIONS** Height: 12 in 30.5 cm

 Width:
 21 in
 53.3 cm

 Depth:
 11.75 in
 29.8 cm

 Weight:
 36 lbs
 16.3 kg

PRODUCT SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

A PRODUCT OF:

FENDER MUSICAL INSTRUMENTS CORP. CORONA, CA 91720 USA